CLAIMS

We claim:

1.   A system for providing network processing and stored data access, the system comprising:

(a)   at least first and second application processors, each of the first and second processors applying substantially the same application;

(b)   a switch operatively connected to at least the first and second processors;

(c)   a data storage device operatively connected to the switch;

(d)   wherein data stored in the data storage device is associated with the application; and

(e)   wherein at least the first and second processors operate at substantially the same time.

2.   The system of Claim 1 wherein the first and second processors comprise memory devices.

3.   The system of Claim 1 wherein the application is associated with a plurality of users.

4.   The system of Claim 1 wherein the application comprises a mail application.

5.   The system of Claim 1 wherein the application comprises a news application.

6.   The system of Claim 1 wherein the application comprises a directory application.

7.   The system of Claim 1 wherein the application comprises a content application.

8.   The system of Claim 1 wherein the application comprises a groupware application.

9. The system of Claim 1 wherein the application comprises an internet protocol (IP) service.

10. The system of Claim 1 wherein the switch comprises a switch with at least first and second interfaces for each of said application processors and the data storage device, the switch operatively connected between the application processors and the data storage device.

11. The system of Claim 1 wherein the data storage device comprises at least first and second mirrored data storage devices.

12. The system of Claim 11 wherein the first and second mirrored data storage devices comprise storage devices with substantially the same data in at least a portion of data in each storage device.

13. The system of Claim 12 wherein the first and second mirrored data storage servers comprise storage devices associated with a plurality of applications.

14. The system of Claim 12 wherein the first and second data storage servers are each associated with a plurality of users.

15. The system of Claim 11 wherein each of the first and second data storage devices comprise a hard disk and a processor.

16. The system of Claim 15 wherein each of the first and second data storage devices comprise Network File System Servers.

17. The system of Claim 1 further comprising a load balancer operatively connected to the first and second processors.

18.   The system of Claim 17 wherein the load balancer comprises a processor operative to select one of the at least first and second processors.

19.   A system for providing network processing and stored data access, the system comprising:

(a)   at least first and second sets of front end processors, each of the sets comprising at least two front end processors applying substantially the same application;

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(b)   at least first and second switches, each switch operatively connected to each of the front end processors in each of the sets;

(c)   at least two data storage servers operatively connected to each of the first and second switches;

(d)   wherein data stored in the data storage devices is associated with the application

10   of at least one set of front end processors; and

(e)   wherein the at least two front end processors of at least one set operates at substantially the same time.

20.   The system of Claim 19 wherein the application for each set of front end processors

15   comprises an application selected from the group of: a mail application, a news application, a directory application, a content application, a groupware application, and an internet protocol (IP) service.

21.   The system of Claim 20 wherein the application for each set of front end processors is

20   associated with a plurality of users.

22.   The system of Claim 19 wherein each of the operative connections from each of the front end processors to each switch and each of the operative connections from each of the data storage servers to each switch comprises a duplicative operative connection.

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23.   The system of Claim 22 wherein each duplicative operative connection comprises a first and second interface.

24.   The system of Claim 19 wherein the first and second data storage servers comprise

30   storage devices with substantially the same data in portions of a total data.

25. The system of Claim 24 wherein the first and second data storage servers comprise storage devices associated with a plurality of applications.

5 26. The system of Claim 24 wherein the first and second data storage servers are each associated with a plurality of users.

27. The system of Claim 19 wherein each of the first and second data storage servers comprise a hard disk and a processor.

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28. The system of Claim 27 wherein each of the first and second data storage devices comprise Network File System Servers.

29. The system of Claim 19 further comprising a load balancer operatively connected to each

15 of the sets of front end processors.

30. The system of Claim 29 wherein the load balancer comprises a processor operative to select one front end processor of one of the sets.

31.   A method for providing network processing and stored data access, the method comprising the steps of:

(a)   applying an application on each of at least first and second application processors at substantially the same time;

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(b)   inputting a plurality of data requests associated with the application, a first and second data request input into the first and second application processors, respectively;

(c)   generating in response to the first and second data request first and second queries, respectively, with the first and second application processors, respectively; and

(d)   switching the first and second queries to a data storage device operatively

10   connected to each of the first and second application processors.

32.   The method of Claim 31 further comprising the step (e) of providing a response to the first and second queries data from the data storage device to the first and second application processors, respectively.

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33.   The method of Claim 31 wherein the step (a) comprises applying an application selected from the group of: a mail application, a news application, a directory application, a content application, a groupware application, and an internet protocol (IP) service.

20   34.   The method of Claim 31 wherein the step (d) comprises switching the query to one of at least two mirrored data storage devices, the at least two mirrored data storage devices containing, at least in part, substantially identical data.

35.   The method of Claim 31 wherein the step (b) comprises routing each of the plurality of

25   data requests to the one of the first and second application processors corresponding to the application processor with the least load.

36.   The method of Claim 34 further comprising the step (e) of adding data to the at least two mirrored data storage devices, the data corresponding to customer data.

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37.   The method of Claim 34 further comprising the step (e) of synchronizing the at least two mirrored data storage devices in response to a failed data storage device comprising one of the at least two data storage devices becoming operational.

38.   A system for providing network processing and stored data access, the system comprising:

(a)   at least a first application processor applying an application;

(b)   a switch operatively connected to the first application processor;

5   (c)   at least first, second and third data storage servers operatively connected to the switch;

(d)   wherein the first, second and third data storage servers provide output data at substantially a same time to the first application processor; and

(e)   wherein data stored on the first data storage server is mirrored in part on the

10   second data storage server and in part on the third data storage server.

39.   The system of Claim 38 wherein:

the application processor generates a plurality of queries for stored data in response a plurality of requests from at least one user;

15   at least one of said plurality of queries is switched to the first data storage server;

at least another of said plurality of queries is switched to the second data storage server; and

the output data is provided in response to the queries.

20   40.   The system of Claim 38 further comprising:

(e)   at least a second application processor applying the application; and

(f)   a load balancer operatively connected to the first and second application processors.

25   41.   The system of Claim 40 wherein the load balancer comprises a processor operative to select one of the first and second application processors to process a user request.

42.   The system of Claim 38 wherein the data stored on the first data storage server comprises first application processor configuration data.

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43.   The system of Claim 38 wherein the first, second and third data storage servers
operatively connect to a hub, the hub operatively connected to the switch.

44.   A method for providing network processing and stored data access, the method comprising the steps of:

(a)   receiving at least first, second and third user requests at a first application processor;

5   (b)   applying an application in response to each of the first, second and third requests with the first application processor;

(c)   generating first, second and third queries for stored data in response to applying the application to the first, second and third requests, respectively;

(d)   switching the first, second and third queries to at least a first, second and third 10   source of stored data, respectively, the first, second and third sources comprising mirrored data;

(e)   mirroring data stored in the first source in part in the second source and in part in the third source; and

(f)   providing first, second, and third output data at substantially a same time in response to the first, second and third queries, respectively, from the first, second and third 15   sources, respectively to the application processor.

45.   The method of Claim 44 wherein the step (a) comprises routing each of the first, second and third requests to the one of the first and a second application processors with the least load, the first and second application processors applying the application.

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46.   The method of Claim 44 further comprising step (g) of storing application processor configuration data on at least one of the first, second and third sources of stored data.

47.   The method of Claim 44 further comprising step (g) of providing operation signals from 25   each of the first, second and third sources of stored data to a switch and a hub.

48.   A system for providing network processing and stored data access, the system

comprising:

(a)   at least first and second application processors applying an application;

(b)   a load balancer operatively connected to the first and second application

5   processors;

(c)   a switch operatively connected to the first and second application processors;

(d)   at least first and second sources of stored data operatively connected to the switch,

the first and second source comprising mirrored data; and

(e)   wherein the first and second source of stored data provide output data at

10   substantially a same time to the first application processor for the application.

49.   The system of Claim 48 wherein:

at least one of the first and second application processors generates a plurality of queries

for stored data in response a plurality of requests from at least one user;

15   at least one query is switched to the first source of stored data;

at least another query is switched to the second source of stored data; and

the output data is provided in response to the queries.

50.   The system of Claim 48 further comprising:

20   at least a third source of stored data; and

wherein data stored on the first source of stored data is mirrored in part on the second

source of stored data and in part on the third source of stored data.

51.   The system of Claim 48 wherein the load balancer comprises a processor operative to

25   select one of the first and second application processors to process a user request.

52.   The system of Claim 48 wherein the data stored on at least the first source of stored data

comprises first application processor configuration data.

53.   The system of Claim 48 wherein the first and second source of stored data operatively connect to a hub, the hub operatively connected to the switch.

54.   A method for providing network processing and stored data access, the method comprising the steps of:

(a)   load balancing at least first and second user requests between at least first and second application processors, respectively;

5   (b)   applying an application in response to each of the first and second requests with the first and second application processors;

(c)   generating first and second queries for stored data in response to applying the application to the first and second requests, respectively;

(d)   switching the first and second queries to at least first and second sources of stored 10   data, respectively, the first and second sources comprising mirrored data; and

(e)   providing first and second output data at substantially a same time in response to the first and second queries, respectively, from the first and second sources, respectively to at least the first application processor.

15   55.   The method of Claim 54 wherein the step (a) comprises routing each of the first and second requests to the one of the first and second application processors with the least load.

56.   The method of Claim 54 further comprising step (f) of storing application processor configuration data on at least one of the first and second sources of stored data.

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57.   The method of Claim 54 further comprising step (f) of providing operation signals from each of the first and second sources of stored data to a switch and a hub.

58.   The method of Claim 54 further comprising step (f) of mirroring data stored in the first 25   source of stored data in part in the second source of stored data and in part in a third source of stored data.

59.   A system for providing network processing and stored data access, the system comprising:

(a)   at least a first application processor applying an application;

(b)   a switch operatively connected to the first application processor;

5   (c)   at least first and second source of stored data operatively connected to the switch, the first and second source comprising mirrored data;

(d)   a hub operatively connected to the first and second sources of stored data and the switch; and

(e)   wherein the first and second source of stored data provide output data at

10   substantially a same time to the first application processor and provide status data to the switch and the hub.

60.   The system of Claim 59 wherein:

the first application processor generates a plurality of queries for stored data in response a

15   plurality of requests from at least one user;

at least one of said plurality of queries is switched to the first source of stored data;

at least another of said plurality of queries is switched to the second source of stored data;

and

the output data is provided in response to the queries.

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61.   The system of Claim 59 further comprising:

(f)   at least a second application processor applying the application; and

(g)   a load balancer operatively connected to the first and second application processors.

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62.   The system of Claim 61 wherein the load balancer comprises a processor operative to select one of the first and second application processors to process a user request.

63.   The system of Claim 59 wherein the data stored on the first data storage server comprises

30   first application processor configuration data.

64.   The system of Claim 59 further comprising:

        at least a third source of stored data; and

        wherein data stored on the first source of stored data is mirrored in part on the second

5   source of stored data and in part on the third source of stored data.

65.   A method for providing network processing and stored data access, the method comprising the steps of:

(a)   receiving at least first and second user requests at a first application processor;

(b)   applying an application in response to each of the first and second requests with

5   the first application processor;

(c)   generating first and second queries for stored data in response to applying the application to the first and second requests, respectively;

(d)   switching the first and second queries to at least a first and second source of stored data, respectively, the first and second sources comprising mirrored data;

10   (e)   providing first and second output data at substantially a same time in response to the first and second queries, respectively, from the first and second sources, respectively, to the first application processor; and

(f)   providing operation signals from each of the first and second sources of stored data to a switch and a hub.

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66.   The method of Claim 65 wherein the step (a) comprises routing each of the first and second requests to one of the first and a second application processor with the least load, the first and second application processors applying the application.

20   67.   The method of Claim 65 further comprising step (g) of storing application processor configuration data on at least one of the first and second sources of stored data.

68.   The method of Claim 65 further comprising step (g) of mirroring data stored in the first source of stored data in part in the second source of stored data and in part on a third source of stored data.

25   stored data.

69.   A system for providing network processing and stored data access, the system comprising:

    (a)   at least a first application processor applying an application;

    (b)   a switch operatively connected to the first application processor;

5   (c)   at least first and second sources of stored data operatively connected to the switch, data of the first and second source comprising mirrored application processor configuration data; and

    (d)   wherein the first and second source of stored data provide output data at substantially a same time to the first application processor for the application.

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70.   The system of Claim 69 wherein:

the application processor generates a plurality of queries for stored data in response a plurality of requests from at least one user;

at least one of said plurality of queries is switched to the first source of stored data;

15   at least another of said plurality of queries is switched to the second source of stored data; and

the output data is provided in response to the queries.

71.   The system of Claim 69 further comprising:

20   (e)   at least a second application processor applying the application; and

    (f)   a load balancer operatively connected to the first and second application processors.

72.   The system of Claim 71 wherein the load balancer comprises a processor operative to

25   select one of the first and second application processors to process a user request.

73.   The system of Claim 69 wherein the first and second source of stored data operatively connect to a hub, the hub operatively connected to the switch.

30   74.   The system of Claim 69 further comprising:

at least a third source of stored data; and

wherein data stored on the first source of stored data is mirrored in part on the second source of stored data and in part on the third source of stored data.

75.   A method for providing network processing and stored data access, the method comprising the steps of:

(a)   receiving at least first and second user requests at a first application processor;

(b)   applying an application in response to each of the first and second requests with the first application processor;

(c)   generating first and second queries for stored data in response to applying the application to the first and second requests, respectively;

(d)   switching the first and second queries to at least a first and second source of stored data, respectively, the first and second sources comprising mirrored data;

(e)   providing first and second output data at substantially a same time in response to the first and second queries, respectively, from the first and second sources, respectively to the application processor; and

(f)   storing application processor configuration data on at least one of the first and second sources of stored data.

76.   The method of Claim 75 wherein the step (a) comprises routing each of the first and second requests to the one of the first and a second application processor with the least load, the first and second application processors applying the application.

77.   The method of Claim 75 further comprising step (g) of providing operation signals from each of the first and second sources of stored data to a switch and a hub.

78.   The method of Claim 75 further comprising step (g) of mirroring data stored in the first source of stored data in part in the second source of stored data and in part on a third source of stored data.